VERTICALLY INTEGRATED PROJECTS (VIP) AND SUSTAINABLE DEVELOPMENT

Scott Strachan

Stephen Marshall

University of Strathclyde

for Sustainable Development (#VIP4SD)

"Making a difference through useful learning"

In 2025 the global student population in Further and Higher Education will reach more than 260 million

- (Goddard, 2011)

Agenda 2030

"Taking the SDGs from the United Nations into countries and leveraging the **potential of young people** to get them on the agenda is very important." *– Amina J. Mohammed, the United Nation's Deputy Secretary General*

"All of our hopes for a better world rest on young people"

- Secretary-General, António Guterres'

"*Universities can **harness their unique access to large concentrations of young people** to directly contribute to all the SDGs*" – Monash University (SDSN Member)

Creative

Energetic

Optimistic

Global

Idealistic

Challenging

Meaningful Contributions

Arguably the most important of the SDGs

"Education is addressed "integrating education into as a standalone goal in SDG 4 especially as a sustainable development" primary driver of human development"

"Education is also a recognised as being critical to the implementation of all of the "integrating sustainable Goals ... develop capacity of development into education" actors around the world **to play active roles** in the work of the 2030 Development Agenda"

4.7 by 2030 ensure all learners acquire knowledge and skills needed to promote sustainable development, including among others through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development

Why ESD?

- It's what our students and HEIs want… this is what they care about!!

70% would like to see sustainable development actively incorporated and promoted through all courses

81% say sustainable development is something they would like to learn more about

15%

61% would accept a salary 15% lower than average to work in a company with a good social and environmental record

25% say they've never heard of the UN Sustainable Development Goals

- SDG Academy – SDSN initiative to create and curate free, graduate-level online courses on sustainable development
- including health, education, climate change, agriculture and food systems, sustainable investment

SDSN Sites

Why ESD?

- It's what our students and HEIs want
- It's what businesses and employers want

Business Reporting on the SDGs:
"A partnership to co-create the mechanisms for global business transparency and reporting on the SDGs."

"70% of businesses plan to embed the SDGs within 5 years" PwC

The bottom line for business…

- No longer a single bottom-line that puts profits before people and planet

The TRIPLE bottom line for business

Results at a glance

Every organisation is influenced by or has influence on meeting the Sustainable Development Goals (SDGs).

72%
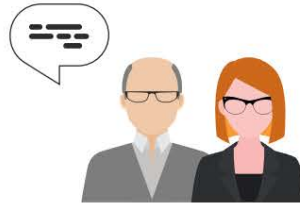of companies mention the SDGs in their annual corporate or sustainability report

50%
of companies have identified priority SDGs

54%
of those that prioritised the Goals, mention them in their business strategy

19%
of CEO or Chair statements in annual reports mention the SDGs

2.71
Average score (out of 5) for reporting quality for those companies that had prioritised the SDGs

23%
of companies disclosed meaningful Key Performance Indicators and targets related to the SDGs

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From promise to reality:
Does business really care about the SDGs?

And what needs to happen to turn words into action

"there is a clear appetite for embracing the SDGs, many organisations still lack the strategy, tools and culture needed to transform those commitments into tangible business actions"

Why ESD?

- It's what our students and HEIs want
- It's what employers and businesses want
- Institutional benefit
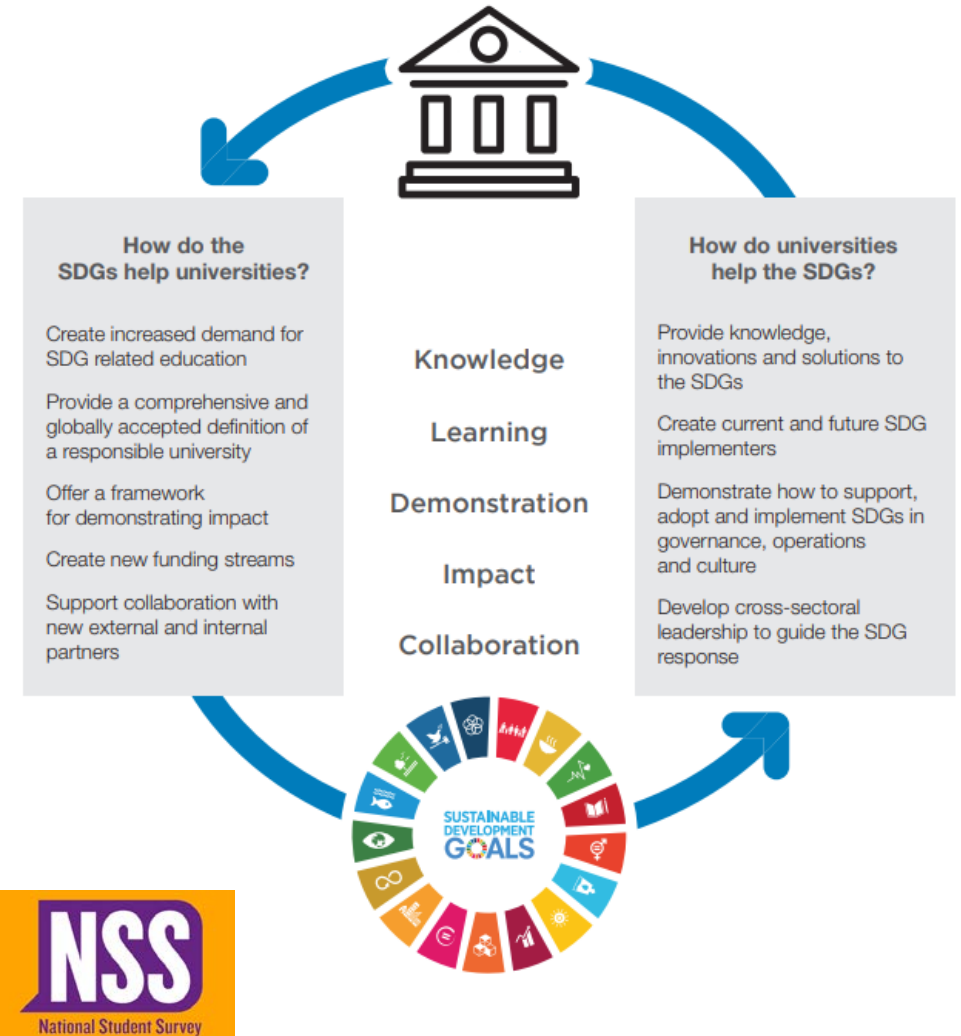
"integrating sustainable development into education"

- The Global Action Programme (GAP) on ESD, the follow- up programme to the Decade of ESD (2005-2014), recoginises that ESD is a crucial enabler for Sustainable Development
- Seeks to generate and scale-up ESD and to accelerate progress towards sustainable development, through two objectives:
  - Reorienting education and learning so that everyone has the opportunity to acquire the knowledge, skills, values and attitudes that empower them to contribute to a sustainable future.
  - Strengthening education and learning in all agendas, programmes and activities that promote sustainable development.

Education for Sustainable Development and the SDGs

Learning to Act, Learning to Achieve

Policy Brief
Advancing ESD Policy
January 2018

UNESCO Global Action Programme on
Education for Sustainable Development

"Education will be the lynchpin of a sustainable development agenda whose success relies on individuals, throughout their lifetime, acquiring relevant knowledge and developing positive attitudes to address global challenges".[1]

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"advance the **change in teaching and learning processes**, **bringing in new approaches** that –

- stimulate pupils to ask questions, analyse, think critically and make decisions,
- are cooperative rather than competitive
- are more interactive, exploratory, action-oriented, problem-based, experiential and transformative learning"

How can we best partner with them to achieve these Global Goals?

What innovative methods exist for embedding **Education for Sustainable Development** in undergraduate curricula?

Relationships between Research and Teaching

Previously

Higher Education Academy

AdvanceHE
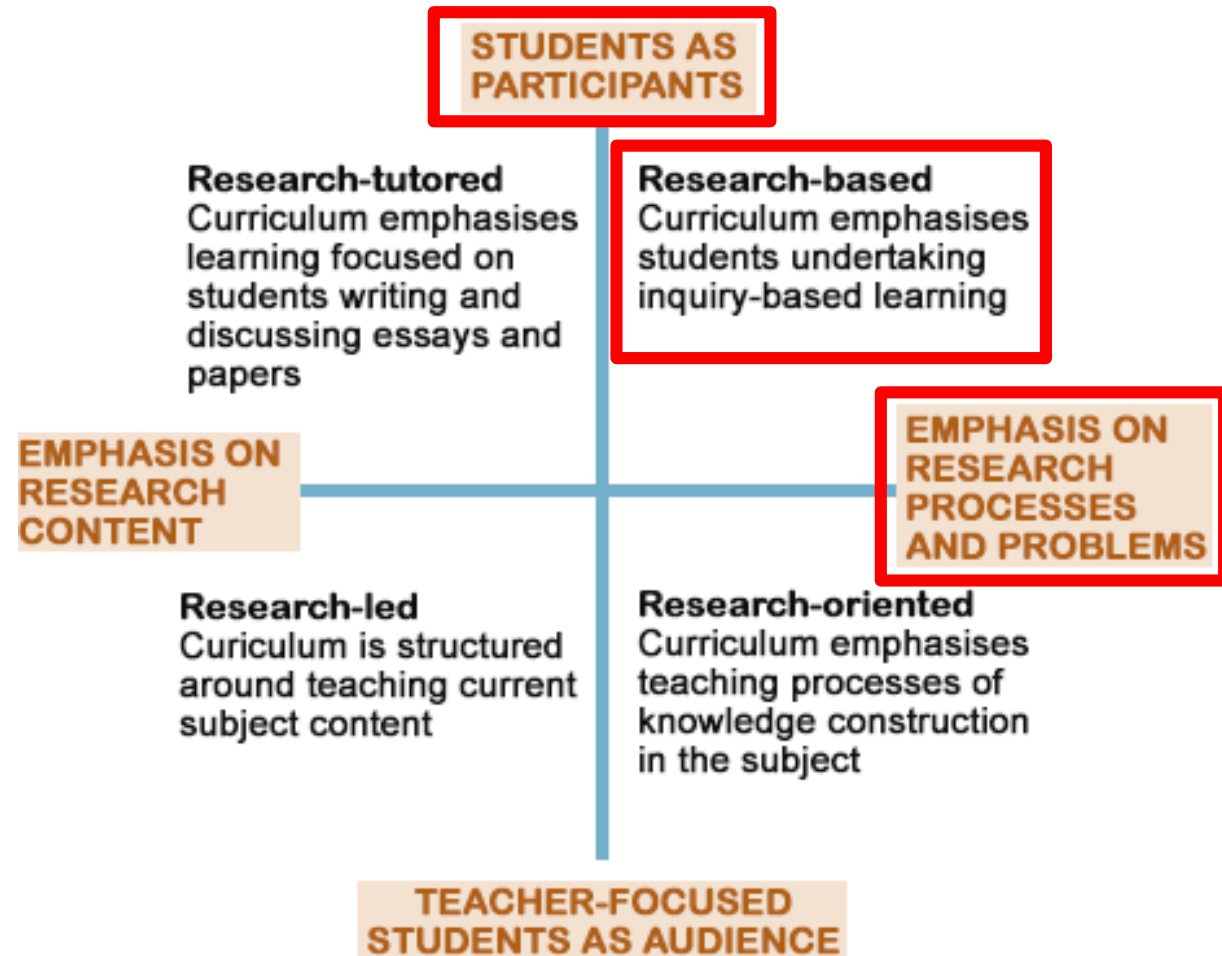
Developing undergraduate research and inquiry
Mick Healey and Alan Jenkins, June 2009

What innovative methods exist for embedding **Education for Sustainable Development** in undergraduate curricula?

Research-Based Education (RBE)

Research-Based Education (RBE)

Research-Based Education, where students become research active, undertaking research and inquiry

- (Griffiths, 2007)

Students are encouraged to become **'knowledge producers'** as opposed to **'consumers'** in tackling **real-world problems**

- (Healey and Jenkins, 2009)

Research and Teaching Nexus… VIP4SD

Research on the SDGs

Interdisciplinary and transdisciplinary research

Innovations and solutions

National & local implementation

Capacity building for research

RESEARCH

EDUCATION

Education for sustainable development

Jobs for implementing the SDGs

Capacity building

Mobilising young people

Governance and operations aligned with SDGs

Incorporate into university reporting

OPERATIONS & GOVERNANCE

EXTERNAL LEADERSHIP

Public engagement

Cross-sectoral dialogue and action

Policy development and advocacy

Advocacy for sector role

Demonstrate sector commitment

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Research-Based Education (RBE)

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Involves interdisciplinary, collaborative working and learning between research staff and students of different year groups on 'real' research objectives, delivering impact.
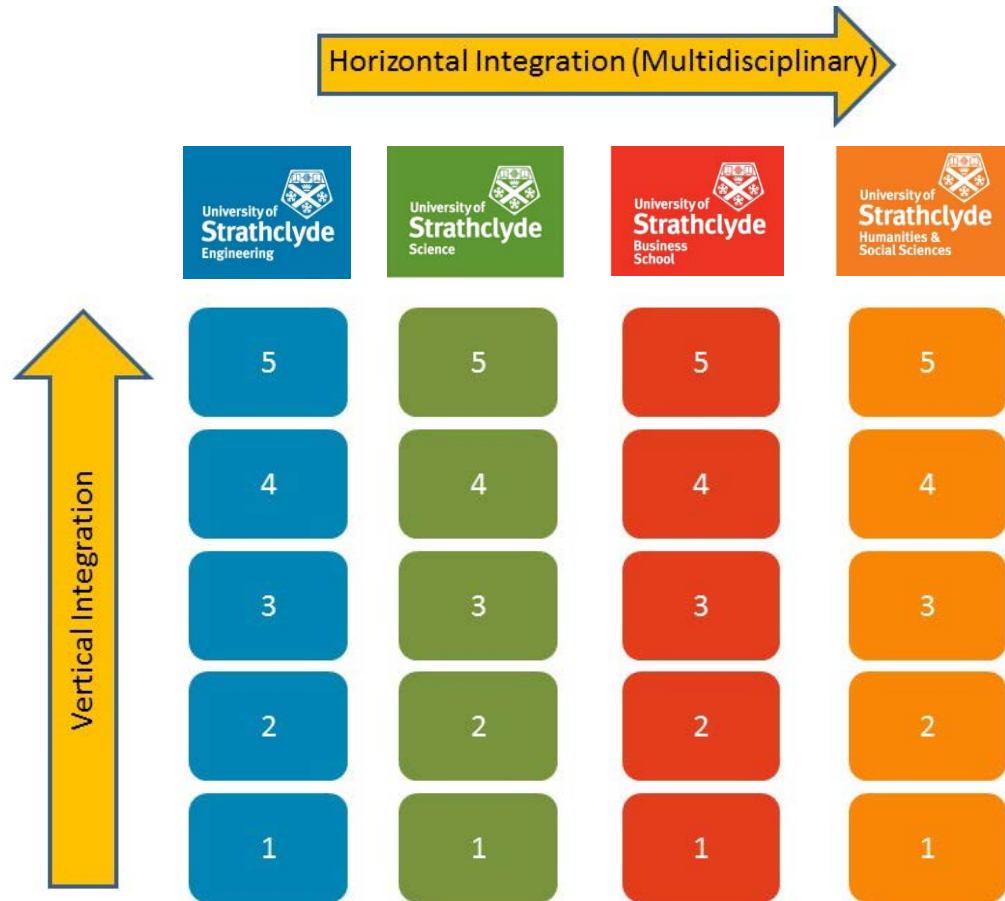
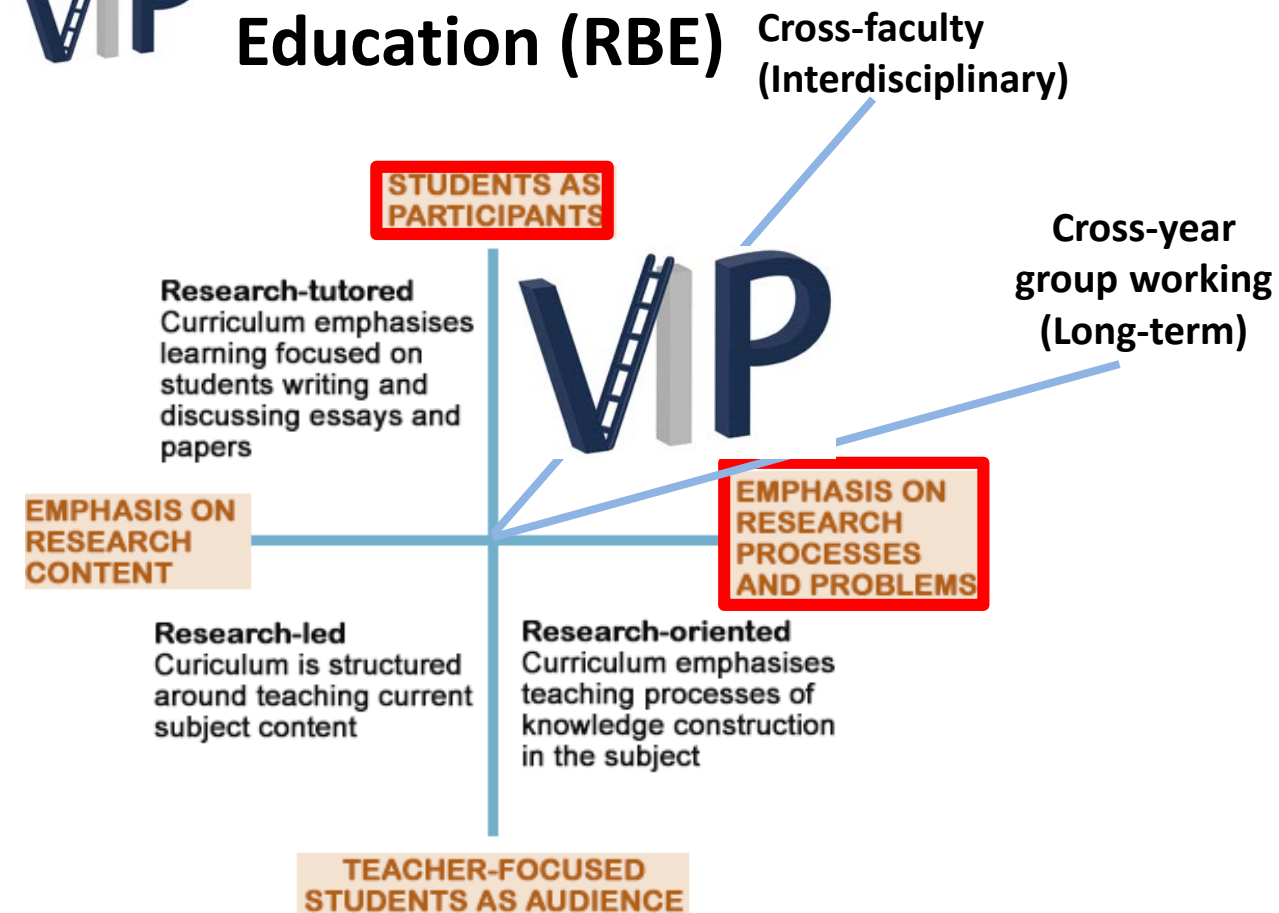# Research-Based Education (RBE)

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Research-Based Education (RBE)

Horizontal Integration (Multidisciplinary)

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Involves interdisciplinary, collaborative working and learning between students of different year groups and research staff on 'real' research objectives, delivering impact.

Vertically Integrated Projects

Research-Based Education (RBE)

Cross-faculty (Interdisciplinary)

Cross-year group working (Long-term)

STUDENTS AS PARTICIPANTS

Research-tutored
Curriculum emphasises learning focused on students writing and discussing essays and papers

EMPHASIS ON RESEARCH CONTENT

EMPHASIS ON RESEARCH PROCESSES AND PROBLEMS

Research-led
Curiculum is structured around teaching current subject content

Research-oriented
Curriculum emphasises teaching processes of knowledge construction in the subject

TEACHER-FOCUSED STUDENTS AS AUDIENCE

Where did VIP originate?

1101 Students

80 VIP Projects
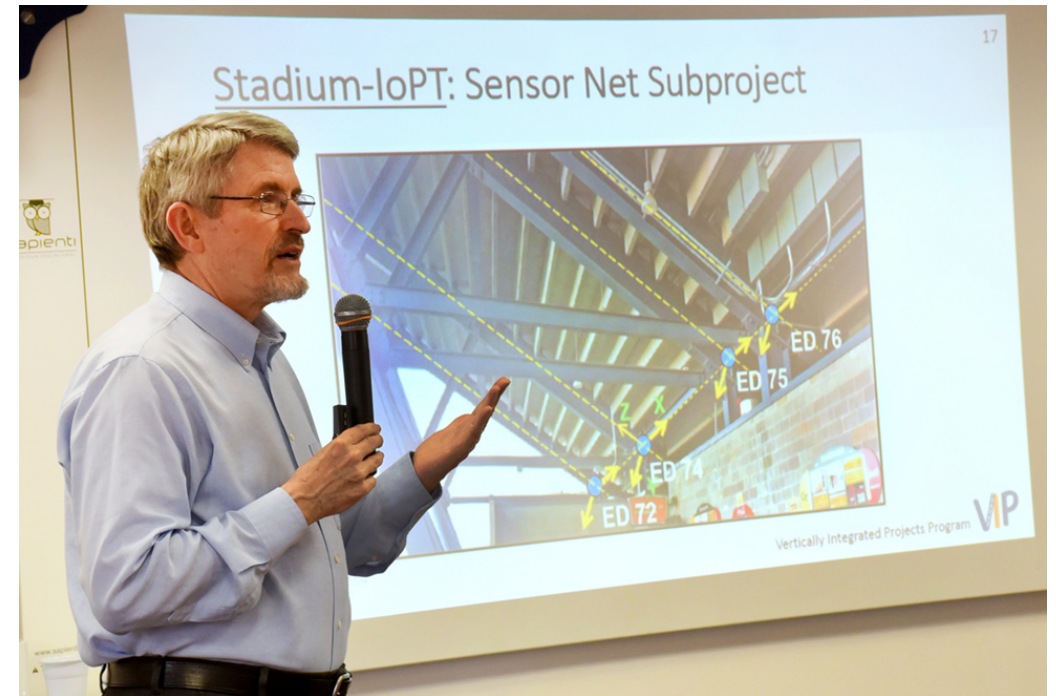
Prof Ed Coyle

The **VIP** Consortium: 40 and counting…
… a community of practice

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United States (24)
- Arizona State University
- Boise State University
- Colorado State University
- Drexel University
- Florida International University [URM]
- **Georgia Tech**[AAU,1]
- Howard University [URM]
- Iowa State University[AAU]
- **Morehouse College**[URM,1]
- New York University[AAU]
- Notre Dame
- Polytechnic Univ of Puerto Rico[URM]
- Purdue University[AAU,1]
- Rice University[AAU]
- Stony Brook University[AAU]
- Texas A&M University [AAU,URM,1]
- UC Davis[AAU,URM]
- University of Delaware

- **University of Georgia**
- University of Hawaii[URM]
- University of Michigan[AAU,1]
- University of Washington[AAU]
- VA Commonwealth University
- Virginia Tech

International (11)
- Inha University (Korea)
- Malmö University (Sweden)
- Natn'l Dong Hwa University (Taiwan)
- Natn'l Ilan University (Taiwan)
- Riga Technical University (Latvia)
- Universidad del Norte (Colombia)
- Universidad ICESI (Colombia)
- Universidad Mayor (Chile)
- Univ. of New South Wales (Australia)
- University of Pretoria (South Africa)
- University of Strathclyde [1] (Scotland)

Pending (5)
- **Georgia State University**
- NCA&T University[URM]
- Reykjavik University
- Tuskegee University [URM]
- UNICAMP
- Universidad de Chile

LEGEND:

AAU: Member Institution (9)

URM: Underrepresented Minority Institution (7)

1: Program in place prior to Consortium establishment (5)

Bold: State of Georgia Institutions (3)

for Sustainable Development

- **Research-Based** Education for Sustainable Development

provides the means for embedding

RBES DESD

in UG curricula

Means ➡ End
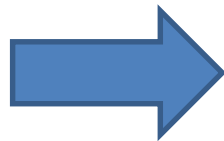
Education for Sustainable Development Goals

Learning Objectives

ESD refers to the pedagogical approach of learning about and developing cross-cutting competencies and skills needed to work on achieving SDGs
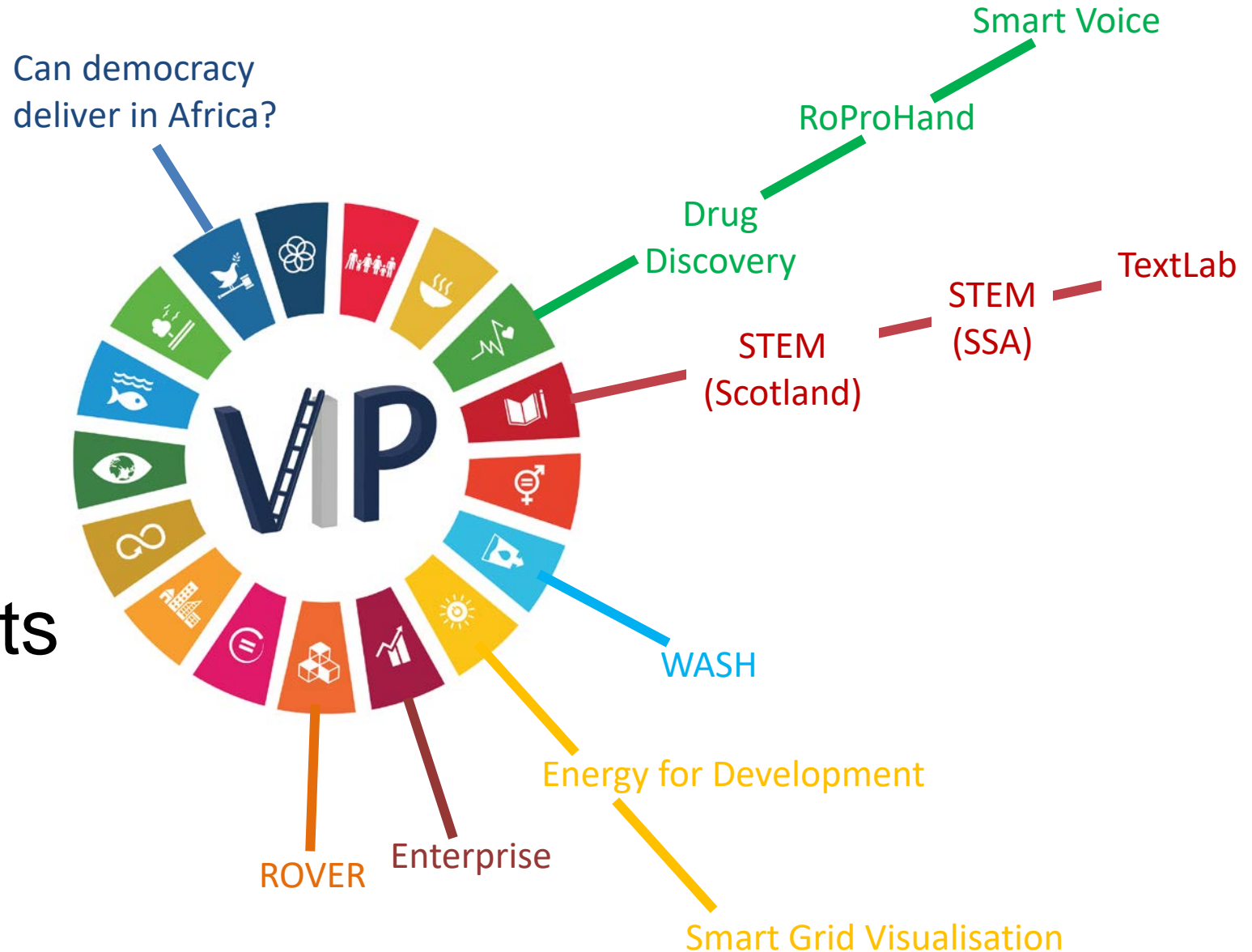
- Systems thinking competency
- Anticipatory competency
- Normative competency
- Strategic competency
- Collaboration competency
- Critical thinking competency
- Self-awareness competency
- Integrated problem-solving competency

Education 2030

Education for Sustainable Development (ESD)

Also what employers want...

ESD refers to the pedagogical approach of learning about and developing cross-cutting competencies and skills needed to work on achieving SDGs

"we should be preparing students for the *work of the world,* not just *the world of work*"

https://www.theguardian.com/higher-education-network/blog/2012/feb/16/universities-lead-sustainability-agenda-porritt

VIP4SD at Strathclyde… projects in pipeline

>200 students

13 VIP4SD projects

Smart Voice

RoProHand

Can democracy deliver in Africa?

Drug Discovery

STEM (SSA)

TextLab

STEM (Scotland)

WASH

Energy for Development

Smart Grid Visualisation

ROVER

Enterprise

SUSTAINABLE DEVELOPMENT GOAL 7

Ensure access to affordable, reliable, sustainable and modern energy for all

14 students

Energy for Development

SUSTAINABLE DEVELOPMENT GOAL 7

Ensure access to affordable, reliable, sustainable and modern energy for all

7 AFFORDABLE AND CLEAN ENERGY
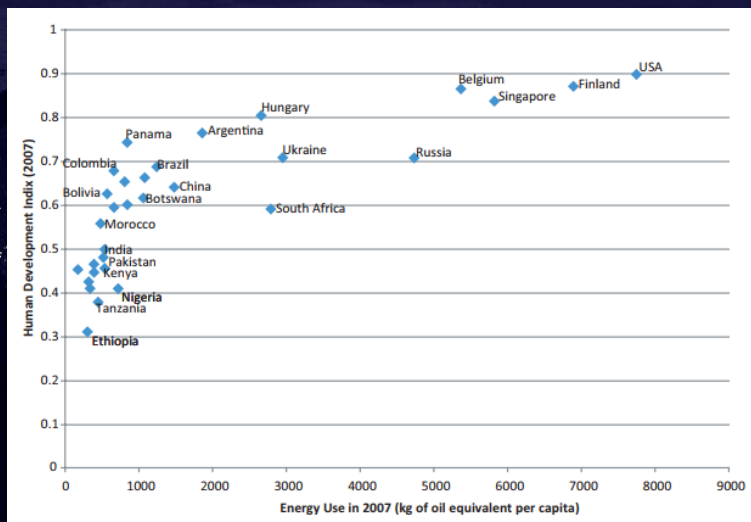
UN Goal No. 7: Ensure access to affordable, reliable, sustainable and modern energy for all

0.86 Billion without access to Electricity:
Sub-Saharan Africa – 632 million

Further **1.7 billion** with unreliable access:
29 blackouts per month in Nigeria or India

2019

7 AFFORDABLE AND CLEAN ENERGY

2030 ?

7 AFFORDABLE AND CLEAN ENERGY
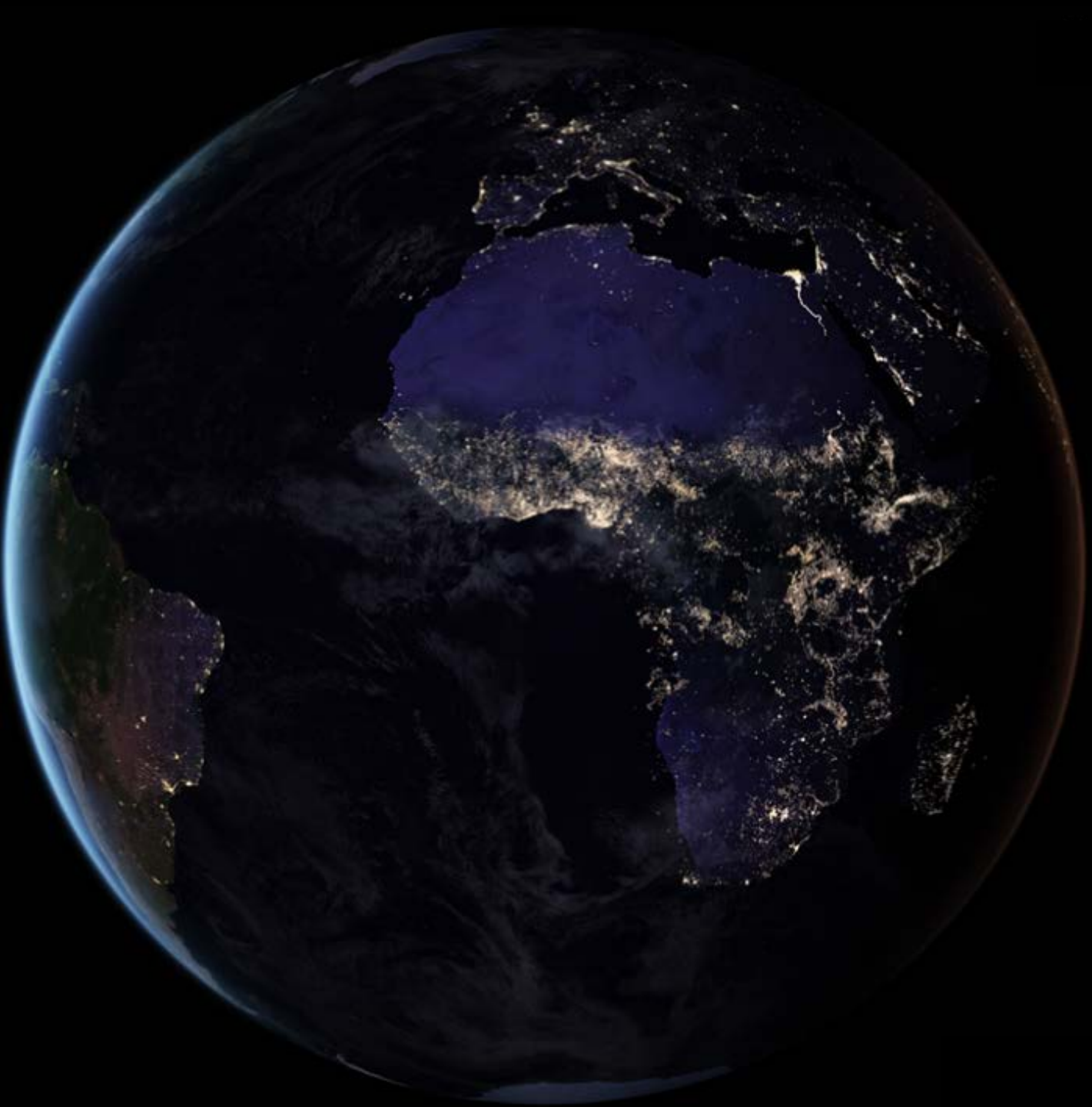
"Energy is the **golden thread** that connects economic growth, increased social equity, and an environment that allows the world to thrive."
– Former UN Secretary-General Ban Ki-moon
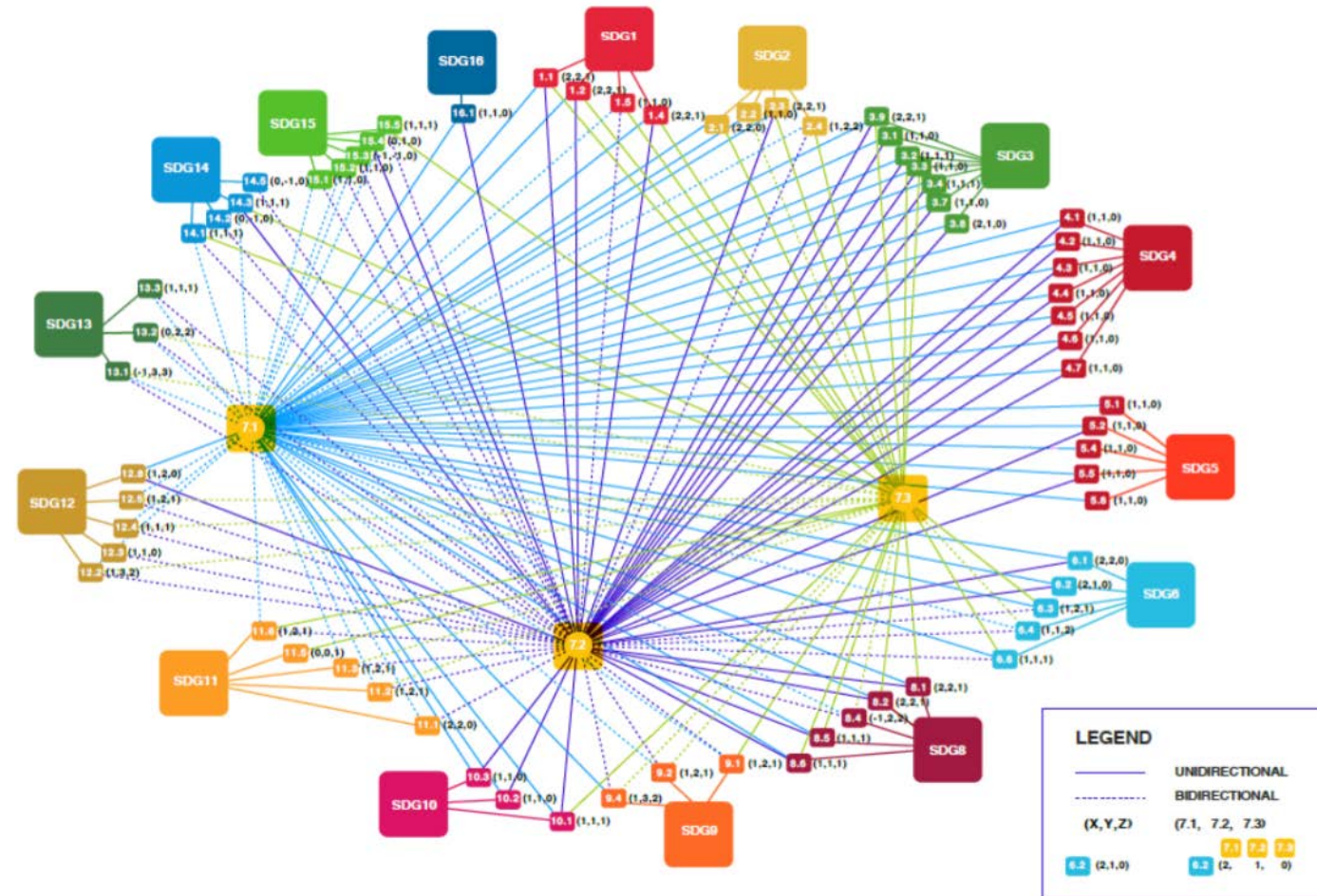
Figure from "*SDG 7 as an enabling factor for sustainable development: the role of technology innovation in the electricity sector*", Alloisio et al

SE4D

7 AFFORDABLE AND CLEAN ENERGY

Support The Gambia Solar Project
www.strath.ac.uk/give2gambia

2019 Energy for Development VIP4SD Expedition

News

Engineering students bring solar power to another school in The Gambia

28 July 2019   Share: in 🐦 f

Engineering students from the University of Strathclyde have installed a solar-powered energy system in another school in The Gambia.

Research into skin collection of blood chemistry from babies seeks to replace invasive blood sampling

Strathclyde named Sunday Times Good University Guide Scottish University of the Year 2020

Emma - "The people were incredibly grateful for the power that the team installed and described how beneficial it would be. The lighting would allow night classes to be held and the fans would create cooler, more comfortable environments to learn in."

Callum - "It's a strange contradiction - little pieces of technology appear with people taking selfies on mobile phones, playing music from wireless speakers; but they still rely on open fires for cooking food, using candles for lighting and walking long distances to get water from open wells.

Sustainable Energy for Development VIP

SE4D

Student Experience ☑
Teaching and Research ☑
Impact ☑

for Sustainable Development Conference 2018
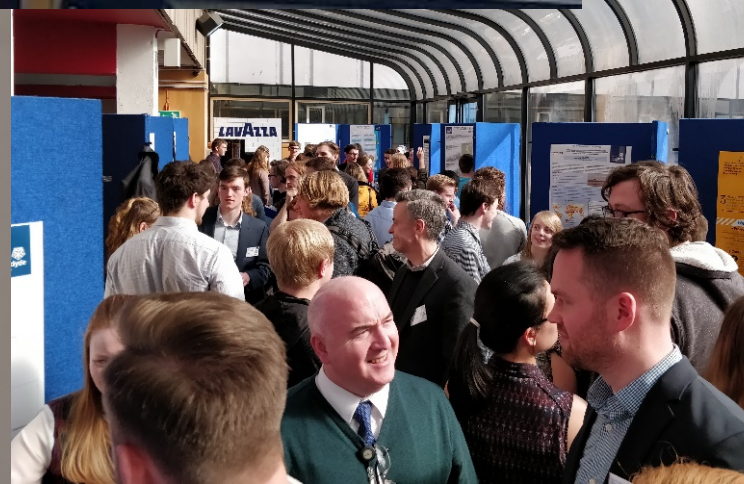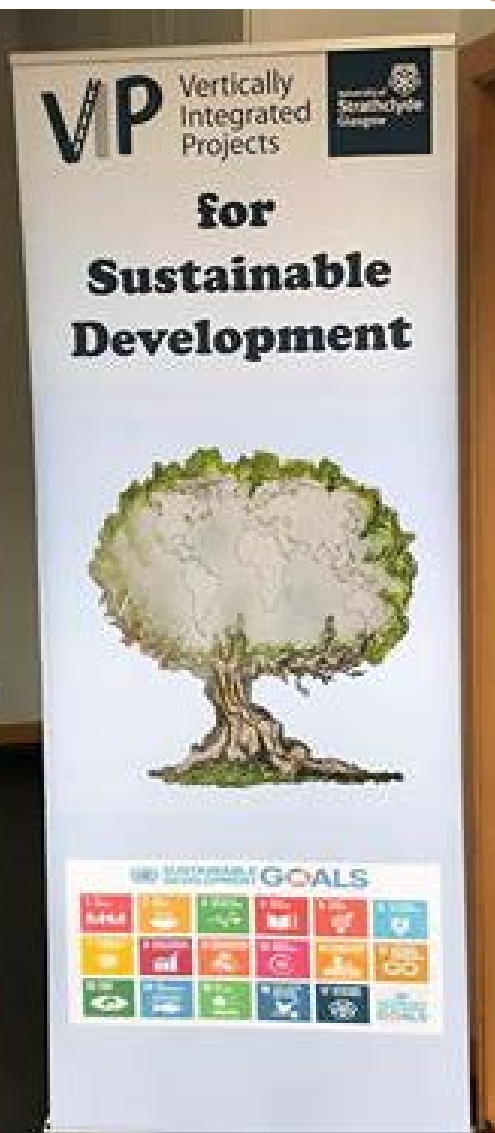
for Sustainable Development Conference 2019

2019/20 Student Conferences
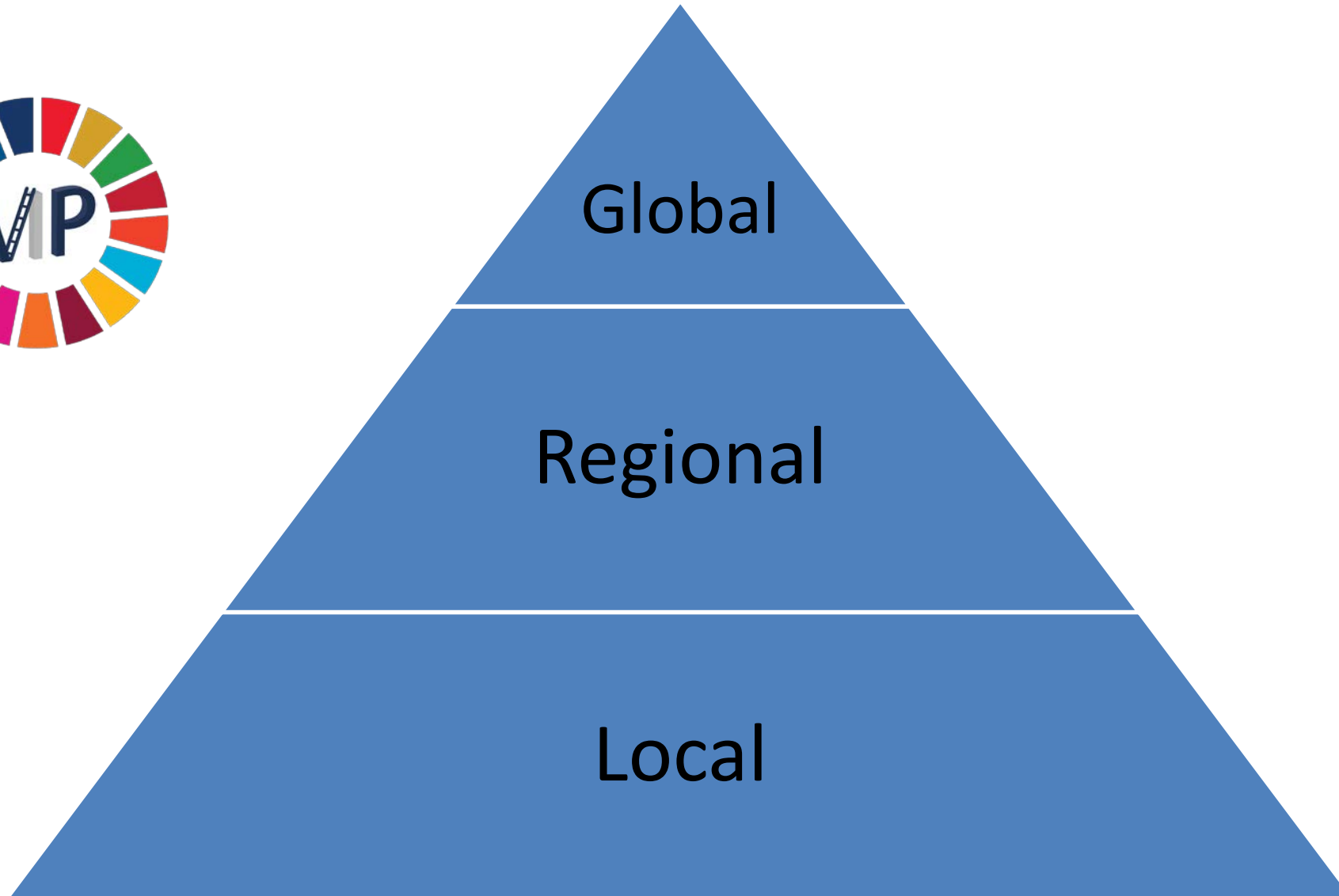
VIP4SD - Practical method for connecting curriculum with RBE and ESD
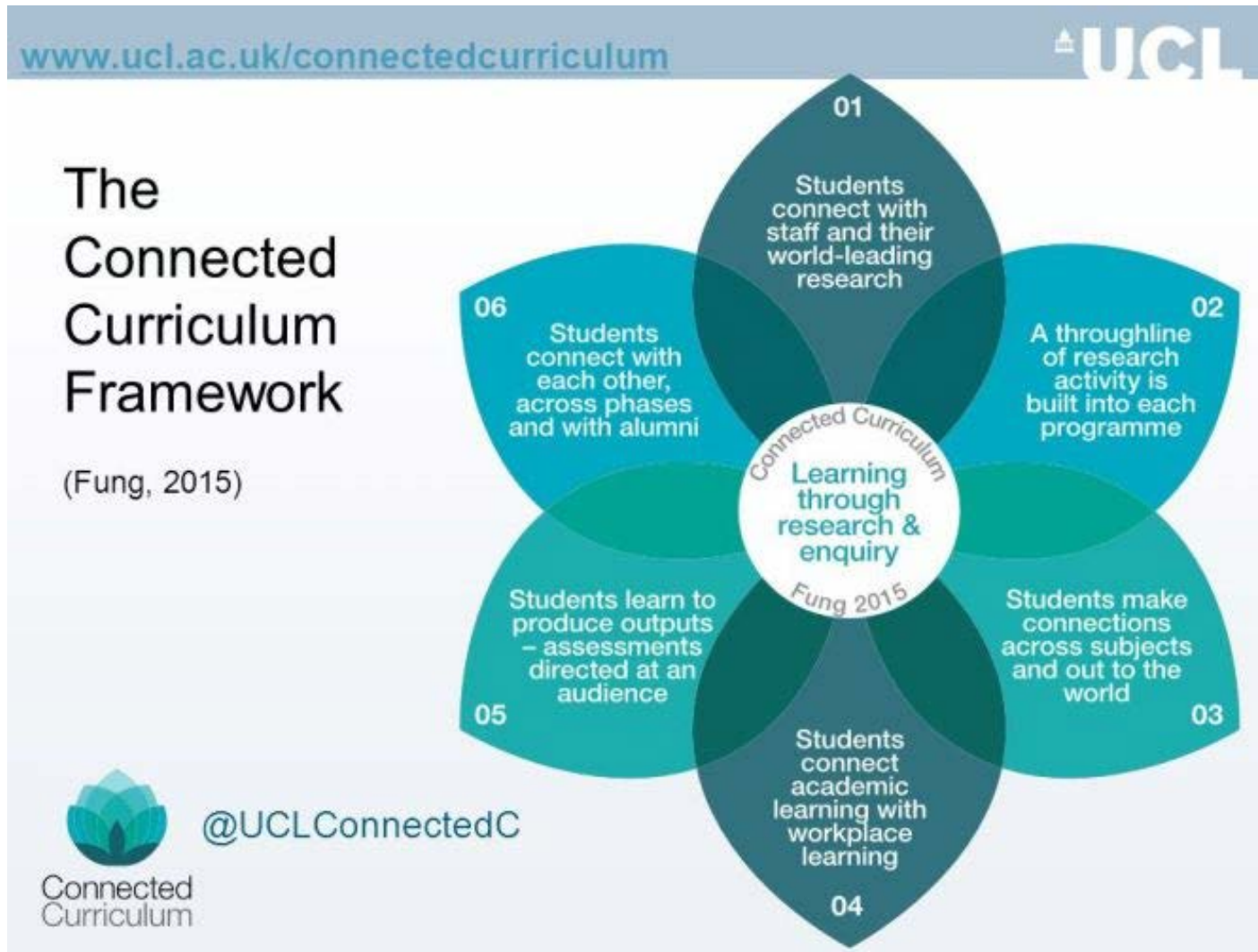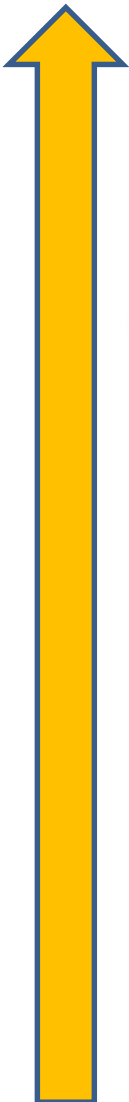
PhD Pipeline

Onwards
And
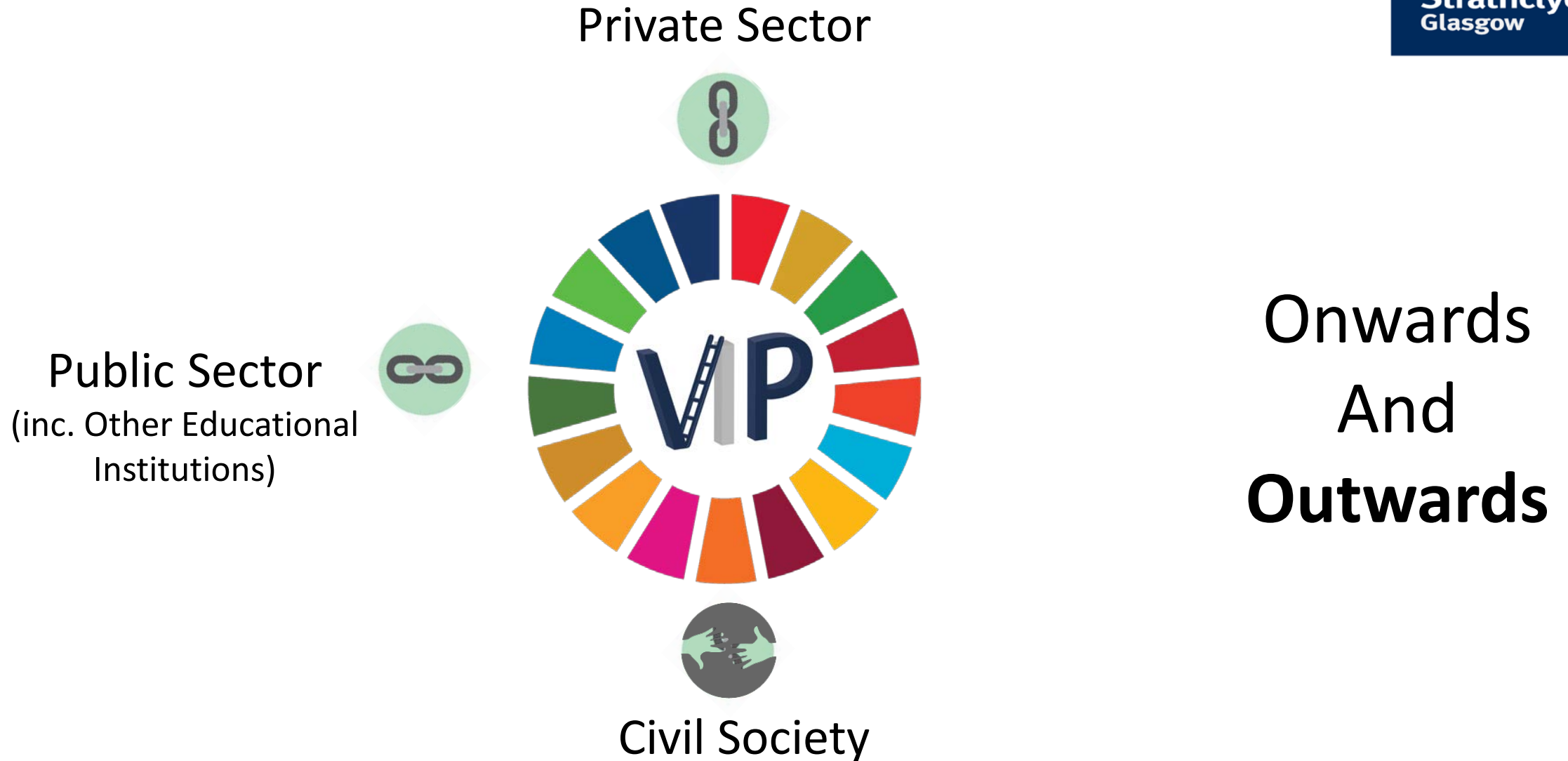Upwards

Vision – Full Vertical Integration

Vision – Cross-Sector/Stakeholder Engagement

Private Sector

Public Sector
(inc. Other Educational Institutions)

Civil Society

Onwards
And
Outwards

Vision – Institutionalise

Challenges and Institutional Support

- Need to ensure the necessary institutional resources and capacities for effective delivery – practical support required to address challenges of:
  - Academic regulations to accommodate a new way of teaching and learning
  - Changes required to existing curriculum – finding/creating VIP4SD pathways through degrees
  - Degree accreditation requirements
  - Staff engagement and resource
  - Student recruitment

"Policy makers, curriculum developers, school administrators, assessment experts, and teachers as these important stakeholders hold the key to the successful development and mainstreaming of ESD curriculum"

– UNESCO ESD Policy Brief

Vision – Institutionalise & Internationalise
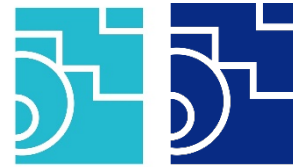
17 PARTNERSHIPS FOR THE GOALS

Join Us!

VIP for Sustainable Development

University of Strathclyde Glasgow

SUSTAINABLE DEVELOPMENT GOALS

scott.strachan@strath.ac.uk